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DOCKET #: 12951/60688

### ABSTRACT

The present invention discloses a process using one, not two, labels to perform parallel analysis of multiple samples for their differential gene expression profiles. This process is achieved by using a platform technology, which integrates current DNA micro array and current high throughput screening technology. The invention defines a process that may use a single label to carry out parallel comparison of multiple gene expression samples. The process takes advantage of high density DNA micro array technology and high throughput automation equipment to perform high throughput gene expression analysis, but uses only a single label. Such labeling and analysis reduces variations found in dual fluorescent dye labeling and converts the current manual sample handling to automated sample processing. Thus, the invention enables the transformation of the current DNA micro array technology into a high throughput screening tool.